

Abstract

The method serves for detecting the magnetic flux, the rotor position and/or the rotational speed of the rotor in a single- or multiphase permanent magnet- or –synchronous motor or -generator using the stator voltage equations

$$\text{Equation (1)} \quad L \cdot \dot{i}_{\alpha} = -R \cdot i_{\alpha} + p \cdot \omega \cdot \psi_{m\beta} + u_{\alpha}$$

$$\text{Equation (2)} \quad L \cdot \dot{i}_{\beta} = -R \cdot i_{\beta} - p \cdot \omega \cdot \psi_{m\alpha} + u_{\beta}$$

It is characterized in that with the evaluations one takes into account the energy conditions of the rotor, by which means one may achieve an accuracy which is considerably greater than known methods.